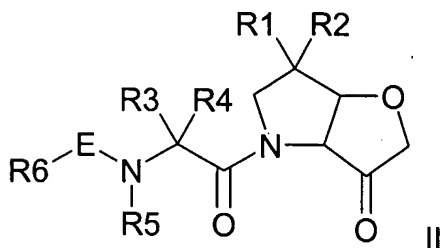


IN THE CLAIMS:

Claim 1. (Original) A compound of the formula II



wherein

one of R¹ and R² is halo and the other is H or halo;

R³ is C₁-C₅ straight or branched chain, optionally fluorinated, alkyl;

R⁴ is H; or

R³ together with R⁴ defines

a spiro-C₅-C₇ cycloalkyl, optionally substituted with 1 to 3 substituents selected from halo, hydroxyl, C₁-C₄ alkyl or C₁-C₄ haloalkyl; or optionally bridged with a methylene group; or

a C₄-C₆ saturated heterocycle having a hetero atom selected from

O, NR_a, S, S(=O)₂ ;

R⁵ is independently selected from H or methyl;

E is -C(=O)-, -S(=O)_m-, -NR⁵S(=O)_m-, -NR⁵C(=O)-, -OC(=O)-,

R⁶ is a stable, optionally substituted, monocyclic or bicyclic, carbocycle or heterocycle wherein the or each ring has 4, 5 or 6 ring atoms and 0 to 3 hetero atoms selected from S, O and N and wherein the optional substituents comprise 1 to 3 members selected from R₇;

R₇ is independently selected from halo, oxo, nitrile, nitro, C₁-C₄ alkyl, -XNR_aR_b, -XNR_bR⁹, -NR_bC₁₋₄alkylR⁹, NH₂CO-, X-R⁹, X-O-R⁹, O-X-R⁹, X-C(=O)R⁹, X-(C=O)NR_aR⁹, X-NR_bC(=O)R⁹, X-NHSO_mR⁹, X-S(=O)_mR⁹, X-C(=O)OR⁹, X-NR_bC(=O)OR⁹;

R₉ is independently H, C₁-C₄ alkyl, C₃-C₆ cycloalkyl, pyrrolidinyl, piperidinyl, morpholinyl, thiomorpholinyl, piperazinyl, indolinyl, pyranyl, thiopyranyl, furanyl,

thienyl, pyrrolyl, oxazolyl, isoxazolyl, thiazolyl, imidazolyl, pyridinyl, pyrimidinyl, pyrazinyl, indolyl, phenyl, any of which is optionally substituted with R¹⁰;

R₁₀ is independently selected from hydroxy, XR⁹, -XNRaRb, -XNRbR⁹, -NRbC₁-C₄alkylR⁹, nitro, cyano, carboxy, oxo, C₁-C₄ alkyl, C₁-C₄-alkoxy, C₁-C₄ alkanoyl, carbamoyl;

X is independently a bond or C₁-C₄ alkyl;

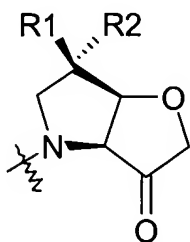
Ra is independently H, C₁-C₄ alkyl or CH₃C(=O);

Rb is independently H, or C₁-C₄ alkyl

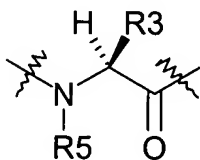
m is independently 0, 1 or 2;

or a pharmaceutically acceptable salt or prodrug thereof.

Claim 2. (Original) A compound according to claim 1, wherein the stereochemistry is as depicted in the partial structure below:



Claim 3. (Original) A compound according to claim 1, wherein the stereochemistry is as depicted in the partial structure below:



Claim 4. (Original) A compound according to claim 1, wherein R² is halo and R¹ is H.

Claim 5. (Original) A compound according to claim 4, wherein R² is fluoro.

PRELIMINARY AMENDMENT
U.S. Appln. No.: Not Yet Assigned

Claim 6. (Original) A compound according to claim 1, wherein R¹ and R² are fluoro.

Claim 7. (Original) A compound according to claim 1, wherein R³ is C₁-C₄ branched chain alkyl.

Claim 8. (Original) A compound according to claim 7, wherein R³ is iso-butyl.

Claim 9. (Original) A compound according to claim 1, wherein R³ and R⁴ together define spirocycloalkyl.

Claim 10. (Original) A compound according to claim 9, wherein R³ and R⁴ together define spirocyclohexyl.

Claim 11. (Original) A compound according to claim 1, wherein R⁵ is H.

Claim 12. (Original) A compound according to claim 1, wherein E is -C(=O)-.

Claim 13. (Original) A compound according to claim 1, wherein R⁶ is substituted phenyl.

Claim 14. (Original) A compound according to claim 13, wherein the substituent comprises -NRaRb, -CH₂NRaRb, -NRbR⁹, -NRbC₁-C₄alkylR⁹, C₁-C₄ straight or branched alkyl or -O-R⁹.

Claim 15. (Original) A compound according to claim 14, wherein the substituent comprises

-NH-CH₂phenyl, -NHCH₂pyridyl or -NH-phenyl, wherein each phenyl or pyridyl ring is substituted with C₁-C₄-alkyl, -NRaRb, -NRbR⁹ or -NRbC₁-C₄alkylR⁹.

Claim 16. (Original) A compound according to claim 13, wherein the substituent comprises C₃-C₆ cycloalkyl, pyrrolidinyl, piperidinyl, morpholinyl, thiomorpholinyl, piperazinyl, indolinyl, pyranyl, thiopyranyl, furanyl, thienyl, pyrrolyl, oxazolyl, isoxazolyl, thiazolyl, imidazolyl, pyridinyl, pyrimidinyl, pyrazinyl, indolyl, phenyl, any of which is optionally substituted with R¹⁰.

Claim 17. (Original) A compound according to claim 16, wherein the substituent is selected from indolinyl, pyranyl, thiopyranyl, pyrrolyl, oxazolyl, isoxazolyl, thiazolyl, imidazolyl, pyridinyl, pyrimidinyl, pyrazinyl, indolyl, any of which is optionally substituted with R¹⁰.

Claim 18. (Original) A compound according to claim 17, wherein the substituent is thiazolyl, 5-methyl-thiazolyl or thienyl, optionally substituted with R¹⁰.

Claim 19. (Original) A compound according to claim 18, wherein the substituent is thiazol-4-yl, 5-methylthiazol-4-yl or thien-2-yl, optionally substituted with R¹⁰.

Claim 20. (Original) A compound according to claim 18, wherein the thiazolyl, 5-methylthiazolyl or theinyl is substituted with morpholinyl, morpholinylmethyl-, piperidinyl, piperidinylmethyl-, piperazinyl, piperazinylmethyl, any of which is substituted with C₁-C₃ alkyl, fluoro, difluoro or C₁-C₃ alkyl-O-C₁-C₃alkyl-.

Claim 21. (Original) A compound according to claim 20, wherein the substituent to the thiazolyl, 5-methylthiazolyl or thienyl is piperid-4-yl which is substituted with methyl, piperazinyl which is N-substituted with C₁-C₃ alkyl or methyloxyethyl-, -or piperid-1-ylmethyl- which is unsubstituted or 4-substituted with fluoro or di-fluoro.

Claim 22. (Original) A compound according to claim 13, wherein the substituent comprises a morpholine, piperidine or piperazine ring, optionally substituted with R¹⁰.

Claim 23. (Original) A compound according to claim 22 comprising piperid-4-yl or N-piperazinyl, N-substituted with Ra or piperidin-1-yl which is 4-substituted with -NRaRb.

Claim 24. (Original) A compound according to claim 1, wherein R⁶ is optionally substituted: benzothiazol or benzofuryl or benzoxazolyl.

Claim 25. (Original) A compound according to claim 24, wherein the substituent is -OR⁹, -OXR⁹, -NRbR⁹ or -NRbXR⁹.

Claim 26. (Original) A compound according to claim 25, wherein R⁹ is piperid-4-yl, piperazin-1-yl or piperidin-1-yl or morpholino, any of which is substituted with C₁-C₃ alkyl.

Claim 27. (Original) A compound according to claim 26, wherein the optional substituent to R⁶ is N-morpholinylethyloxy, N-methylpiperid-4-yloxy, or N-methylmorpholin-3-ylmethyloxy.

Claim 28. (Currently Amended) A pharmaceutical composition comprising a compound as defined in ~~any of claims claim 1 to 27~~ and a pharmaceutically acceptable carrier or diluent therefor.

Claim 29. (Currently Amended) ~~Use of~~ A method for the treatment of a disorder mediated by cathepsin K comprising administering a compound as defined in any of claims 1-27 in the manufacture of a medicament for the treatment of disorders mediated by cathepsin K.

Claim 30. (Currently Amended) ~~A method Use~~ according to claim 29, wherein the disorder is selected from:

osteoporosis,

gingival diseases such as gingivitis and periodontitis,
Paget's disease,
hypercalcaemia of malignancy
metabolic bone disease
diseases characterised by excessive cartilage or matrix degradation, such as
osteoarthritis and rheumatoid arthritis.
bone cancers including neoplasia,
pain.